

WHAT IS CLAIMED IS:

1. An image processing apparatus in which a color correction table containing a correspondence relationship between an input color signal and an output color signal in a table form is utilized in a conversion operation between color signals, comprising:

a color correction table holding unit for storing thereinto a predetermined discrete input color signal and a color correction table which contains a correspondence relationship between said predetermined discrete input color signal and an output color signal in a table form;

an approximating unit for approximating an entered input signal to said discrete input color signal of the color correction table to thereby output the approximated color signal;

an approximate error producing unit for calculating an approximate error based upon both the color signal inputted into the approximating unit and the color signal outputted from the approximating unit;

an approximate error holding unit for holding thereinto the approximate error calculated by said approximate error producing unit;

a signal correcting unit for correcting the color signal entered into said approximating unit by employing said approximate error held in said approximate holding unit; and

an output unit for outputting an output color

2025-10-24 14:23:00

signal which corresponds to the input color signal outputted from said approximating unit with reference to said color correction table.

2. An image processing apparatus as claimed in claim 1, wherein:

the output color signal outputted from the output unit is constituted by gradation data which can be represented by a device into which said output color signal is entered, and data used to switch said gradation data by way of a dither process operation.

3. An image processing apparatus as claimed in claim 2, wherein:

said image processing apparatus is further comprised of:

a dither processing unit for comparing the data used to switch the gradation data with a dither matrix in which threshold values are arranged to thereby output a dither result; and

an adding unit for adding said dither result to said gradation data.

4. An image processing apparatus as claimed in claim 1, wherein:

said approximating unit compares an inputted color signal with a threshold value provided between said discrete input color signals so as to determine such a discrete color signal which is approximated to said inputted color signal.

5. An image processing apparatus as claimed in

claim 3, wherein:

said approximating unit compares an inputted color signal with a threshold value provided between said discrete input color signals so as to determine such a discrete color signal which is approximated to said inputted color signal.

6. An image processing apparatus as claimed in claim 1, wherein:

intervals among said discrete input color signals of said color correction table are not equi-intervals.

7. An image processing apparatus as claimed in claim 5, wherein:

intervals among said discrete input color signals of said color correction table are not equi-intervals.

8. An image processing apparatus as claimed in claim 1, wherein:

said discrete input color signals of said correction table are such color signals which correspond to minimum gradation, maximum gradation, and gradation equal to the respect subdivided points in such a case that a total gradation number of an input color signal is equally subdivided by "N" (symbol "N" being 2, or more positive integers).

9. An image processing apparatus as claimed in claim 5, wherein:

said discrete input color signals of said

2025 RELEASE UNDER E.O. 14176

correction table are such color signals which correspond to minimum gradation, maximum gradation, and gradation equal to the respect subdivided points in such a case that a total gradation number of an input color signal is equally subdivided by "N" (symbol "N" being 2 or more positive integers).

10. An image processing method comprising:

a step for correcting an inputted color signal;

a step for using a color correction table containing a correspondence relationship between a predetermined discrete input color signal and an output color signal in a table form so as to acquire a discrete input color signal which is approximated to said corrected input color signal;

a step for calculating an approximate error based upon both said corrected input color signal and said approximated color signal; and

a step for outputting an output color signal corresponding to said approximated input color signal with reference to said color correction table;

wherein said approximate error is used so as to correct a color signal which is inputted subsequent to the first-mentioned input color signal.

11. An image processing method as claimed in claim 10, wherein:

the output color signal corresponding to said approximated input signal is constituted by gradation

data which can be represented by a device into which said output color signal is entered, and data used to switch said gradation data by way of a dither process operation.

12. An image processing method as claimed in claim 11, wherein:

said image processing method is further comprised of:

a step for comparing the data used to switch the gradation data with a dither matrix in which threshold values are arranged to thereby output a dither result; and

a step for adding said dither result to said gradation data.

13. An image processing apparatus as claimed in claim 1, wherein:

said output color signal contains low-frequency noise such as chain-shaped texture, which is produced by both an error diffusion method and an averaged error minimizing method.

14. An image processing method as claimed in claim 10, wherein:

said output color signal contains low-frequency noise such as chain-shaped texture, which is produced by both an error diffusion method and an averaged error minimizing method.